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HOUSEKEEPERS' CHAT

Wednesday, October 6, 1937

(FOR BROADCAST USE ONLY)

Subject: "COLOR IN WHITE POTATOES." Information from the Bureau of Home Economics and the Office of Experiment Stations, U. S. Department of Agriculture.

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When the mashed potatoes appear at the dinner table looking dark instead of beautifully white or creamy, when the boiled potatoes take on a greyish tinge after leaving the kettle, or the steamed potatoes turn dingy as they stand -- it's too bad both for the cook and the family, but it's nobody's fault. You can't blame the cook, or the grocer, or even the farmer who grew the potatoes for something the scientists don't understand. This "after-cooking blackening of potatoes," as they speak of it in technical circles, is a problem that the scientists are working on right now. And though they haven't yet made sure of the cause or the cure, they have found out a good deal about it. They say that baked potatoes darken less than boiled or steamed potatoes, and that the stem-end of the potato shows the darkening most. And they say that potatoes seem to increase this darkening as they stand in the air after cooking. Most housewives have observed that potatoes, steamed or boiled in their skins, are more likely to be dark than those pared before cooking. So it has long been the practice to pare potatoes that are to be boiled for mashing, because dark mashed potatoes are especially unattractive.

During the study of potato cookery at the Bureau of Home Economics recently, the foods people found that milk, added immediately as the potatoes come from the stove, retards darkening. The potatoes they mashed with milk added at once did not darken as fast or as much as those with no milk added. Two workers at the Wisconsin Experiment Station also found milk helpful in preventing darkening, so much so that they even recommended cooking potatoes in milk.

Both the study at the Bureau of Home Economics and at the Wisconsin Station showed that acid such as vinegar or cream of tartar in the cooking water helps prevent darkening. But it does interfere somewhat with the softening of the potatoes.

Though nobody knows for sure what causes this unpleasant change of color, the scientists naturally have some ideas about it. At the Bureau of Home Economics they suggest that it may be a kind of tannin in the potato which turns dark as a result of alkaline cooking water and heat followed by standing in the air. That's one theory. Another is that iron in the potato may contribute to this change of color. Both iron and tannin, you know, give dark stains. Why some potatoes darken this way and others don't is a problem the agricultural scientists are trying to solve. Some believe that growing conditions, like soil and moisture, produce potatoes that blacken this way. One investigator at Wisconsin thinks it is lack of potash in the fertilizer. But so far that problem is still in the theory stage.

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But this baffling "after-cooking darkening" is not the only color-change that occurs in potatoes. Fortunately, the scientists understand the other changes. One of these is the darkening that takes place when a raw potato is cut and exposed to the air. They say this is an oxidation process and can be prevented by dropping the pared or cut potato in water. Water keeps it away from the oxygen of the air which does the oxidizing.

Still another kind of discoloring in potatoes comes from water containing iron or alkali salts -- hard water. Perhaps you have noticed how rice, cooked in hard water, often comes out yellowish or even greenish. The foods people advise keeping rice white by using some cream of tartar in the cooking water. The same sort of color change occurs in potatoes cooked in hard water, and the same sort of remedy is right for them. Offset the effect of alkali in the cooking water with vinegar or cream of tartar. Iron salts in the water will also discolor potatoes -- usually turn them an ugly brownish shade. The iron may come from the water itself, or from an iron cooking utensil, or an enamelware kettle with a chipped place that exposes the iron to the cooking water. To prevent this, avoid iron kettles when you are cooking potatoes, and use a little acid in the cooking water if the water happens to be very hard.

A third color change that the scientists have been studying is a creamy or brown hue that comes from caramelizing the sugar in the potato. You know how white sugar will turn to a brown "caramel" color when you put it over the fire. The same thing happens to the sugar in potatoes especially in the making of potato chips. If the potatoes contain too much sugar, the chip-makers can't sell the chips. They are too brown to be attractive. The scientists have learned that when potatoes are stored in too cold a place, some of their starch changes to sugar. Potatoes stored at temperatures below 50 degrees Fahrenheit have objectionable frying color, according to recent studies. The best colored chips come from potatoes stored at between 60 and 70 degrees. Potatoes stored in too cold a place also will show a creamy or yellowish color when they are baked, boiled and steamed. So apparently the less sugar in the potato, the better cooking color -- if your taste is for white in potatoes.

Which reminds me of one more interesting fact about color in potatoes. In the United States we prefer our white potatoes white. But there are "white" potato varieties that have yellow flesh. The potato-breeding men in the Department of Agriculture have developed several of these. One reason they are especially interested is that yellow-fleshed varieties have more vitamin A than the white. In many foreign countries people prefer the yellow color.

That finishes the potato color news I have for you today.
